

## REMARKS

Reconsideration of the outstanding Office Action is respectfully solicited.

Many thanks to the Examiner for the courteous and thorough interview of August 7, 2001. The Claims presented herein were reviewed by the Examiner. New Claims 24-25 are supported by the application page 1, lines 3-4. The endorsed check includes the fee for claims 24 and 25.

Moreover, the DECLARATION [facsimile transmitted] of A. Scheelen attached hereto [bearing the Examiner's asterisks and pencil marks] was considered. The discussion concerning the DECLARATION related to the fact that applicants' invention provided unexpected improvement in creep resistance over polyethylene unmodified by talc but also substantially maintained the resistance to the rapid propagation of cracks [RCP]. Please see the Table at page 2 of the DECLARATION and page 6 line 25 et seq. of the application. Accordingly, in accordance with applicants' invention there is established a balance between improved creep resistance and control of the rapid propagation of cracks.

The present invention concerns polyethylene-based compositions comprising a very small amount of talc, i.e. less than 1 part by weight of talc per 100 parts by weights of polyethylene.

In the "Response to Arguments" (point 7 of the Official Action, page 8) the Examiner states that "the polyethylene in which the weight per cell of talc is based on could include additional components . . . or that which is the same as "comprising" language". Although the composition claimed in applicants' invention could comprise – besides polyethylene and talc – additional components (see also in the specification on page 3, lines 21-30), the amount of talc in the composition is expressed with regard to the amount of polyethylene (see claim 1). This

polyethylene is defined in the specification on page 2, lines 21-23 and does not include "additional components".

Applicants have found that the addition of such a small amount of talc to polyethylene permits a markedly improved resistance to hydrostatic pressure and a markedly improved creep resistance (page 1, lines 21-23). The addition of small amounts of talc, of less than 1 part by weight per 100 parts by weight of high density polyethylene, provides compositions which make possible the manufacture of shaped articles, such as pipes, for which **creep resistance is significantly improved without affecting the other mechanical properties of the said shaped articles** (page 2, lines 9-15). Consequently, the resins are very suitable for the manufacture of high pressure pipes (see application, page 1, lines 15-23).

These unexpected results were demonstrated in the Application by the comparison of Example 1 (according to the invention) and Comparative Example (see Table I at page 8).

In order to prove that the quantity of talc added to the polyethylene compositions is critical, Applicant conducted an additional new comparative experiment which is the subject of the enclosed Scheelen DECLARATION.

Reconsideration and an early allowance are respectfully solicited.

Respectfully submitted,



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## **MARKED UP VERSION OF CLAIMS CHANGES**

16. (Amended) Polyethylene-based composition for the manufacture of pipes and pipe couplings according to Claim 1, wherein talc is added in an amount effective to increase a creep resistance of said pipes and pipe couplings made of said composition.

17. (Amended) The polyethylene-based composition for the manufacture of pipes and pipe couplings of Claim 15, wherein talc is added in an amount effective to increase a creep resistance of said pipes and pipe couplings made of said composition.

--18. (amended) A pipe or a pipe coupling comprising the composition of Claim 1.

--19. (amended) A pipe or a pipe coupling comprising the composition of Claim 3.

--20. (Amended) The composition of Claim 1, wherein the composition is in the form of a shaped article characterized by creep resistance (t), wherein t = creep resistance expressed in terms of time to fracture, measured according to ISO Standard 1167 (1996) at 20° C on a pipe having a diameter of 50 mm and a thickness of 3 mm and under a circumferential stress of 12.4.

--21. (Amended) The composition of Claim 3, wherein the composition is in the form of a shaped article characterized by creep resistance (t), wherein t = creep resistance expressed in terms of time to fracture, measured according to ISO Standard 1167 (1996) at 20° C on a pipe having a diameter of 50 mm and a thickness of 3 mm and under a circumferential stress of 12.4.

--22. (Amended) The pipe or pipe coupling [composition] of Claim 18, [wherein the composition] which is characterized by creep resistance (t), wherein t = creep resistance expressed in terms of time to fracture, measured according to ISO Standard 1167 (1996) at 20° C on a pipe having a diameter of 50 mm and a thickness of 3 mm and under a circumferential stress of 12.4.

--23. (Amended) The [composition] pipe or coupling of Claim 19, [wherein the composition] which is characterized by creep resistance (t), wherein t = creep resistance expressed in terms of time to fracture, measured according to ISO Standard 1167 (1996) at 20° C on a pipe having a diameter of 50 mm and a thickness of 3 mm and under a circumferential stress of 12.4.

Please add the following Claims:

--24. The pipe or pipe coupling of Claim 18, wherein the polyethylene is high density polyethylene.—

--25. The pipe or pipe coupling of Claim 19, wherein the polyethylene is high density polyethylene.—



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit: 1772  
 Examiner: R. Dye

In re application of

Applicants : André SCHEELEN et al.

Appn. No. : 09/115,229

Filed : July 14, 1998

For : POLYETHYLENE-BASED COMPOSITION  
 AND PROCESS FOR THE MANUFACTURE  
 OF ARTICLES SHAPED FROM THE  
 COMPOSITION

Atty. Dkt. : 32234-144216 (formerly SLVPE 3741.01)

## DECLARATION

Assistant Commissioner for Patents  
 Washington, D.C. 20231

Sir:

I André Scheelen, one of the inventors of the above-identified application declare  
 and state the following:

We have found that the addition of a small amount of talc to polyethylene provides a composition characterized by a markedly improved resistance to hydrostatic pressure and a markedly improved creep resistance (as stated at page 1, lines 21-23, of our application). The addition of small amounts of talc, of less than 1 part by weight per 100 parts by weight of high density polyethylene, provides compositions which make possible the manufacture of shaped articles, such as pipes, for which the creep resistance is significantly improved without affecting the other mechanical properties of the said shaped articles (page 2, lines 9-15). Consequently, the resins are very suitable for the manufacture of high pressure pipes (see application, page 1, lines 15-23).

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These unexpected results were demonstrated in the Application by the comparison of Example 1 (according to the invention) and Comparative Example (see Table I at page 8).

In order to prove that the quantity of talc added to the polyethylene compositions is critical, we have conducted the following new comparative experiment, which was undertaken under my supervision:

A polyethylene composition was prepared such as disclosed in Example 1 of the patent application but by adding 10.5 g of talc (instead of 1 g) to 980.4 g of polyethylene resin (instead of 989.9 g). Hence, the composition contained 1.07 g of talc per 100 g of polyethylene.

The mechanical properties of this composition were measured according to the methods disclosed in the patent application and were compared to those measured on the compositions of Example 1 and of the Comparative Example already disclosed in the Application (see Table hereunder).

	Example 1	Comparative example (without talc)	New comparative example (with more than 1 part of talc per 100 parts of polyethylene)
T (hours)	342	134	310
RCP (bar) (at 0°C) *	9.5 to 10	10 to 12	7 to 7.5

\*measured according to the method disclosed in the Application, but at 0°C instead of -15°C.

As can be seen, compositions containing more than 1 part of talc per 100 parts of polyethylene have a RCP value lower than the compositions according to the invention or than compositions containing no talc. Moreover, their creep resistance (t) is slightly lower than the composition according to the invention.

Hence compositions comprising more than 1 part of talc per 100 parts of polyethylene do not exhibit an improved creep resistance without a deleterious affect on the other mechanical properties. Such compositions are less suitable for making pipes or pipe fittings.

These comparative examples clearly show the criticality of the amount of talc added to the polyethylene.

Example 1 - Page 1 uses 1g per 989.9 g eth copoly

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I further declare that all statements are true and believed to be true and understand that willful false statements may jeopardize the validity of any patent issuing hereon and may result in fine and/or imprisonment.

AUGUST 3, 2001

Date

André Schiecle  
André Scheelen